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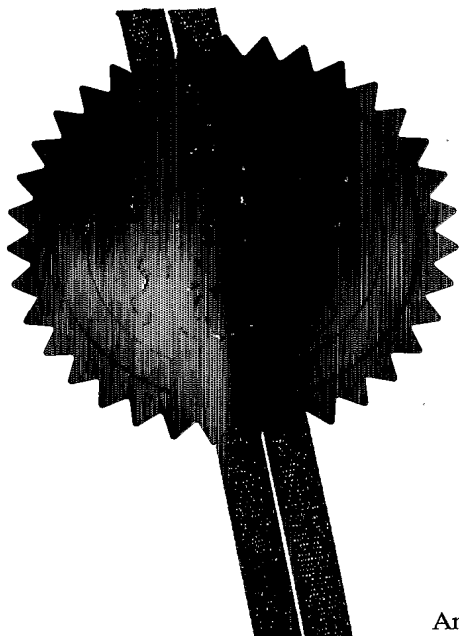
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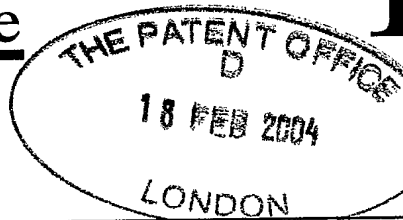
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3. Full name, address and postcode of the or of each applicant (underline all surnames)
Robert Kurt Isserstedt
Acacia House
21 St. Mary's Road
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18 FEB 2004

Patents ADP number (if you know it)

8812349001

If the applicant is a corporate body, give country/state of its incorporation

4. Title of the invention Disc Storage System

5. Name of your agent (if you have one) Frank B. Dehn & Co.

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

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Description 8

Claim(s)

Abstract

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Michael J. Butler
020 7206 0600

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Disc Storage System

This invention relates to a storage system for discs used to store data, such as compact discs, CD-ROM's, DVD's, so-called mini discs and so forth.

5 The content of the discs is immaterial, and could be music, video, multimedia, computer data, computer programs and so forth; indeed, the discs could be blank and to be used for the storage of such content. Likewise, the physical format of the discs is immaterial and whilst they will normally be circular discs they could be square, rectangular, hexagonal or any other regular or irregular shape. They could be discs that
10 are intended to be rotated, as is currently the case with CD's and DVD's, or they could be of a format yet to be commercialised in which they are for example held stationary and scanned. The word "disc" is therefore to be construed broadly as covering a range of products which are not necessarily circular and which are not necessarily used in the same manner as current CD's or DVD's. In general, they will be planar objects and
15 relatively thin, for example no greater than 5 mm in thickness and preferably nearer 1 mm. Typically, the maximum dimension, i.e. diameter in the case of a circular disc, will be less than 150 mm, and for a conventional CD or DVD may be in the region of about 100 to 120 mm. However, the dimensions of the disc are in general immaterial although it should be suitable for storage in a pouch as described below. The material of the disc
20 is also irrelevant, although typically the disc will be lightweight and may be constructed of a plastics material. Although the physical properties of the disc are not relevant to the invention, the disc will generally be rigid although some degree of flexibility will often be present.

DVD's and CD's are in widespread use for the storage of music, video, computer
25 data, computer programs and so forth. They may be supplied pre-recorded or blank for a user to record using suitable apparatus such as a computer read / write CD or DVD drive, or a DVD recorder specifically intended to record television programmes. A typical user may have hundreds of discs for various purposes and this gives rise to storage problems. Typically, consumers are provided with discs in rigid plastic cases.
30 These are considerably thicker than the discs that they contain, and this adds to the storage problems. There have been many proposals for the storage of discs, ranging from complex rack or drawer systems to wallets for containing a selection of discs to be carried around, but these have various drawbacks. For example, typically if a user wants

to carry a selection of discs around it will be necessary to remove the case from a rack or drawer system, take the disc out of the case, replace the empty case in the rack or drawer, and then place the disc inside a pouch in a wallet.

One aspect of the present invention provides a storage pouch for a disc which is
5 versatile and can be removably used in a semi-permanent storage installation such as a rack, or in a portable product such as a storage wallet. According to this aspect of the invention there is provided a storage pouch for a disc, the pouch being of resilient material and having an opening adjacent one edge to permit insertion of a disc into, and removal of a disc from, the pouch, and there being provided adjacent another edge of
10 the pouch an aperture through the pouch, the aperture having a relatively wide portion for receiving an elongate storage element and a relatively narrow portion communicating with said other edge, so that by distortion of the resilient material adjacent the relatively narrow portion the pouch can be located on and removed from the elongate storage element.

Typically, the relatively wide portion of the aperture will be circular so as to
15 receive a circular storage rod, for example. However, other cross sections are possible and for example a square cross section aperture could be used with a matching elongate element or indeed with a circular cross section member. The relatively narrow portion may be in the form of a simple slit or slot extending from the wide portion to the edge.
20 Alternatively, the relatively narrow portion may taper outwardly towards the edge of the pouch, to facilitate placing of the pouch on the storage element. In such an arrangement, the aperture will have the appearance of a keyhole.

Generally two apertures will be provided, one adjacent each end of said other
edge. The pouch will then be suitable for use with a storage unit comprising two parallel
25 elongate elements. The members need not extend in straight lines and can be curved for functional or aesthetic regions. Generally, for a rack there will be two parallel straight members. For a wallet, there will generally be two parallel members, each bent into a loop. In one preferred arrangement for a rack, a single piece of metal wire or rod is bent so as to provide two parallel elongate elements as well as an end stop and two feet at
30 either end. In such an arrangement, the rack may also be stood on its end, with the two feet and an end of the end stop providing a three point support. Other forms of rack are possible, made from wood, metal or plastics as desired, with the elongate elements likewise made from a chosen material such as metal, wood or plastic rods.

The pouch may be constructed from a suitable sheet material such as plastics, which may be transparent, translucent, coloured or opaque as desired. Typically, the main part of the pouch may be generally square for simplicity of construction, having one edge open and the three other edges closed by bonding, welding or the like. The apertures for receiving the elongate elements may be adjacent the edge opposite the open edge.

The pouch may be provided with an extension from one of the faces adjacent the open edge, to act as or be able to receive a label. For example, the extension may be doubled back on itself and bonded, so as to provide a sleeve, open at each end, to receive a label. One of the faces of the sleeve may be provided with one or more cut-outs, such as an oval, so that a user can use a finger or thumb to help insert or remove a label.

One edge adjacent the opening of the pouch may be distorted outwardly, for example by providing a slight crease, to facilitate removal and insertion of a disc.

A pouch containing a disc is considerably thinner and lighter than a conventional plastic case containing a disc. For a given storage space, many more discs can be accommodated than with known systems. It is easy to flick through the pouches to identify a desired disc, and then to remove the pouch and disc from the elongate elements of a rack or wallet. The disc can then be used, carried around, mailed and so forth as desired. After use, the pouch containing the disc can be replaced on the elongate elements. There is the possibility of taking a pouch and disc from a long term storage rack and placing it in a wallet to be carried around, the wallet having a pair of parallel hoops which are received in the pouch apertures.

Dividers and if desired sub-dividers may be provided. These may be more rigid than the pouches if desired, although that is not necessary. The dividers or sub-dividers preferably have labels which extend above the top of the pouches - including any pouch labels. Main dividers may for example have labels extending their full width, whereas sub-dividers may have labels extending only part way across. Sub-dividers may have their labels at staggered positions across, for ease of indexing.

Additionally, alternatively or even incorporated with the function of a divider, there may be provided one or more separators which can be used to keep a selection of pouches in a preferred position on a rack. Such a separator could be movable readily in one direction along the elongate elements but resist movement in the other. Pouches

could then be pushed together at an appropriate point on the rack. the separators may have apertures to receive the elongate elements and sprung portions which engage the elongate elements to resist movement in one direction.

5 In one possible arrangement, a rack can be extendable, or indeed decreased in size, for example by lengthening or shortening the elongate elements. This could be done by using replacement members, by adding or removing member portions, or for example by having telescopic members with a smaller diameter member portion sliding inside a larger diameter member portion. An extendable rack could be useful for packaging purposes, a consumer purchasing the rack in its smallest configuration and
10 then expanding it as desired for use.

A stack of say 50, 100 or more blank discs can be supplied already within pouches, mounted on a suitable rack.

The size and configuration of the apertures should be chosen, having regard to the form of the elongate elements on which the pouches are to be used, to enable the
15 pouches to be placed on and removed from the elongate elements whilst resisting accidental removal. For example, they may be able to resist dropping out if a rack is turned upside down.

A rack may be so that the pouches rest on the elongate elements, are suspended from the elongate elements or project sideways from the elongate elements. The rack
20 may have elongate elements following a curved path, for aesthetic or functional reasons, and may have continuous loops. The rack could be arranged to be positioned on a surface such as a desk or table, mounted on a wall, or for example could be in the form of a box or other case containing the two elongate elements. The rack in certain configurations may be positioned in an alternative manner, on one end. Portions of the
25 rack may serve as a handle or handles to facilitate moving the rack around.

A wallet for containing a smaller number of pouches than a rack may resemble a loose leaf binder, but with continuous rings rather than rings which are opened to add or remove papers.

Another aspect of the invention relates to a complete system comprising a
30 plurality of pouches as described above, in combination with a storage device comprising two parallel, elongate elements whose lateral spacing matches the lateral spacing of two apertures provided on each pouch. In one embodiment of this aspect of the invention, the storage device is in the form of a rack and the elongate elements are

substantially straight. In another embodiment of this aspect of the invention, the storage device is in the form of a wallet and the elongate elements are in the form of hoops within the wallet.

Another aspect of the invention provides a storage rack for use in such a system, comprising a pair of substantially straight, parallel elongate elements, at at least one end of the rack the ends of the elongate elements being joined by a first U-shaped portion having the end of one leg connected to one elongate element and extending away from the plane containing the elongate elements in a first direction, a second U-shaped portion having the end of one leg connected to the end of the other leg of the first U-shaped portion and extending away from the plane containing the elongate elements in a second direction generally opposite said first direction, and a third U-shaped portion having the end of one leg connected to the end of the other leg of the second U-shaped portion and extending away from the plane containing the elongate elements in said first direction, the end of the other leg of said third U-shaped portion being connected to the other elongate element.

The first and second U-shaped portions provide feet, supporting the rack on a surface such as a table or desk. The second U-shaped portion provides an end stop to retain pouches on the rack. The elongate elements and three U-shaped portions are preferably continuous, for example being bent from metal wire or rod. Preferably, the elongate elements are joined together in the above described manner at both ends of the rack, so that there are feet and end stops at both ends. In one preferred arrangement, the cross members of the three U-shaped portions are displaced somewhat away from the ends of the elongate elements. In such an arrangement, the rack can be placed on its end, resting on the three cross members in this alternative configuration.

Viewed from another aspect, the invention provides a package comprising a plurality of discs, each within a pouch as described above, the pouches being mounted on the elongate elements of a storage device as described above. This provides a convenient and functional alternative to conventional methods of packaging bulk numbers of discs, for example.

Viewed from another aspect the invention provides a method of storing a plurality of discs, comprising the steps of placing each disc in a pouch as described above, and mounting each pouch on the elongate elements of a storage device as described above.

Viewed from another aspect, the invention provides a rack for holding a series of pouches, the rack comprising a pair of parallel, elongate elements which are to pass through apertures in the pouches, and end stops at either end of the elongate elements, the end stops extending in planes generally perpendicular to the elongate elements,
5 wherein a pair of feet is provided on each end stop so that the rack can rest on a surface with the elongate elements extending parallel to the surface, and wherein the feet on at least one end stop project outwardly from the plane of that end stop, and that end stop is also provided with a further portion which projects outwardly from the plane of the end stop, so that the rack can rest on a surface in an alternative configuration with the end
10 stop adjacent the surface and the elongate elements extending perpendicular to the surface, the rack being supported by the said two feet and the further portion of the end stop,

Some embodiments of the invention will now be described by way of example and with reference to the accompanying drawings, in which:

- 15 Figure 1 is a front view of a pouch in accordance with the invention;
Figure 2 is a partial front and side perspective view of the pouch;
Figure 3 is a front view of the pouch, showing a label partially inserted;
Figure 4 is a perspective view of a rack in accordance with the invention, for use with a number of the pouches;
20 Figure 5 shows the rack in use;
Figure 6 shows the rack in use in an alternative configuration;
Figure 7 shows the rack in an inverted condition;
Figure 8 is a perspective view of a first alternative rack;
Figure 9 shows the rack of Figure 8 in an alternative configuration;
25 Figure 10 is a perspective view of a second alternative rack;
Figure 11 shows the rack of Figure 10 in an alternative configuration;
Figure 12 is a perspective view of a wallet in accordance with the invention;
Figure 13 is a view showing the wallet with pouches and discs installed; and
Figure 14 is a view showing in more detail one pouch used in the wallet.

30 Referring now to Figure 1, there is shown a plastics pouch 1 of transparent plastics material, containing a compact disc 2 which has been inserted, and can be removed, through an opening 3 along one edge. The sheet of plastic material has a front face 4 and a rear face 5, and the other edges are bonded together or constituted by a fold

in the material. Adjacent the edge opposite the opening 3 are two keyhole shaped apertures. On the left hand side there is a circular portion 6 communicating with the edge via a narrower, but outwardly tapering, portion 7. On the other side are corresponding portions 8 and 9. At the upper edge, the rear face 5 is provided with an extension 10 which is doubled over to provide a passage for receiving a label 11 which can describe the contents of the disc. Figure 2 shows how adjacent the opening 3, the front face 4 has a portion 12 bent outwardly, to facilitate insertion of a disc 2.

Figure 3 shows the label 11 partially inserted into the passage defined by the extension 10. The rear side of the passage is provided with two oval openings 13 and 14, so that a thumb or finger can manipulate the label during insertion or removal.

Figure 4 shows a storage rack 15 for use with a number of the pouches described above. There are two parallel, elongate straight elements 16 and 17 in the form of circular cross section rods. These extend between end stops 18 and 19, which are mirror images in terms of construction. End stop 18 comprises a first U-shaped portion having a downwardly directed leg 20 connected to elongate element 16, a cross member 21 and an upwardly directed leg 22. This first U-shaped portion serves as one foot for the rack, and is angled away from the end of the elongate element 16. Leg 22 is connected to an upwardly directed leg 23 of a second U-shaped portion which has a cross member 24 and a second leg 25. The second U-shaped portion serves as the body of the end stop 18. The leg 25 is connected to a leg 26 of a third U-shaped portion, having a cross member 27 and a leg 28 which is connected to the other elongate element 17. Like the first U-shaped portion, this third U-shaped portion serves as one foot for the rack, and is angled away from the end of the elongate element 17. It can also be seen that the upper portion 29 of the second U-shaped portion is also angled in the same direction. The result is that the three cross members 21, 24 and 27 can serve as feet when the rack is stood on one end., the cross members lying in the same plane so that they will be level and the rack will extend vertically, as shown in Figure 6. The entire rack is constructed from a continuous length of metal rod which has been bent.

Figure 5 shows the rack 15 holding a number of pouches 1 containing discs, each pouch being attached to the elongate elements 16 and 17 which pass through the apertures 6 and 8, the pouches having been pushed on to the elements, which passed through the portions 7 and 9. In a similar manner, dividers 30 and sub-dividers 31 have been positioned on the elongate elements. The labels on the dividers and sub-divider

project above the labels 11 on the pouches. The pouches and dividers can be readily removed and replaced, as desired.

Figure 6 shows the rack 15 in an alternative configuration, resting on one end with cross members 21, 27 and 24 (not visible) serving as feet. Figure 7 shows how the pouches 1, containing discs, remain attached even when the rack 15 is inverted.

Figure 8 shows an alternative rack 32 in the form of a sheet of acrylic plastics material bent into a U shape to provide ends 33 and 34, and a base 35. Two plastics rod 36 and 37 extend between ends 33 and 35, on which the pouches 1 are mounted in the same manner as with the preceding rack. Figure 9 shows this rack in an alternative configuration, resting on end 34.

Figure 10 shows a second alternative rack 38, comprising two wooden end pieces 39 and 40, connected by two parallel plastics rods 41 and 42. End piece 39 is provided with a carrying handle 43. Figure 11 shows the rack in an alternative configuration, resting on end piece 40. It can be carried by the handle 43 in this orientation, with pouches mounted on the rods.

Figure 12 shows a wallet for a selection of pouches containing discs. The wallet has main portions 44 and 45 joined by a spine portion 46. The end of portion 44 is provided with a flap 47. On the spine portion 46 are provided two parallel metal continuous loops 48 and 49, to receive pouches 1 in the same manner as the straight rods in the preceding embodiments. Figure 13 shows a number of pouches 1 in position. Figure 14 shows a single pouch mounted on the loops 48 and 49. As in all the preceding embodiments, the pouch can be readily mounted by pushing it onto the loops. It will then stay in position until deliberately pulled off.

There is thus provided a novel and versatile disc storage system, incorporating a novel pouch with an easy - entry opening and easy to use labelling arrangement, novel racks which can be used in alternative orientations, whether for keeping a collection of discs or supplying blank disks in bulk, and a novel wallet.

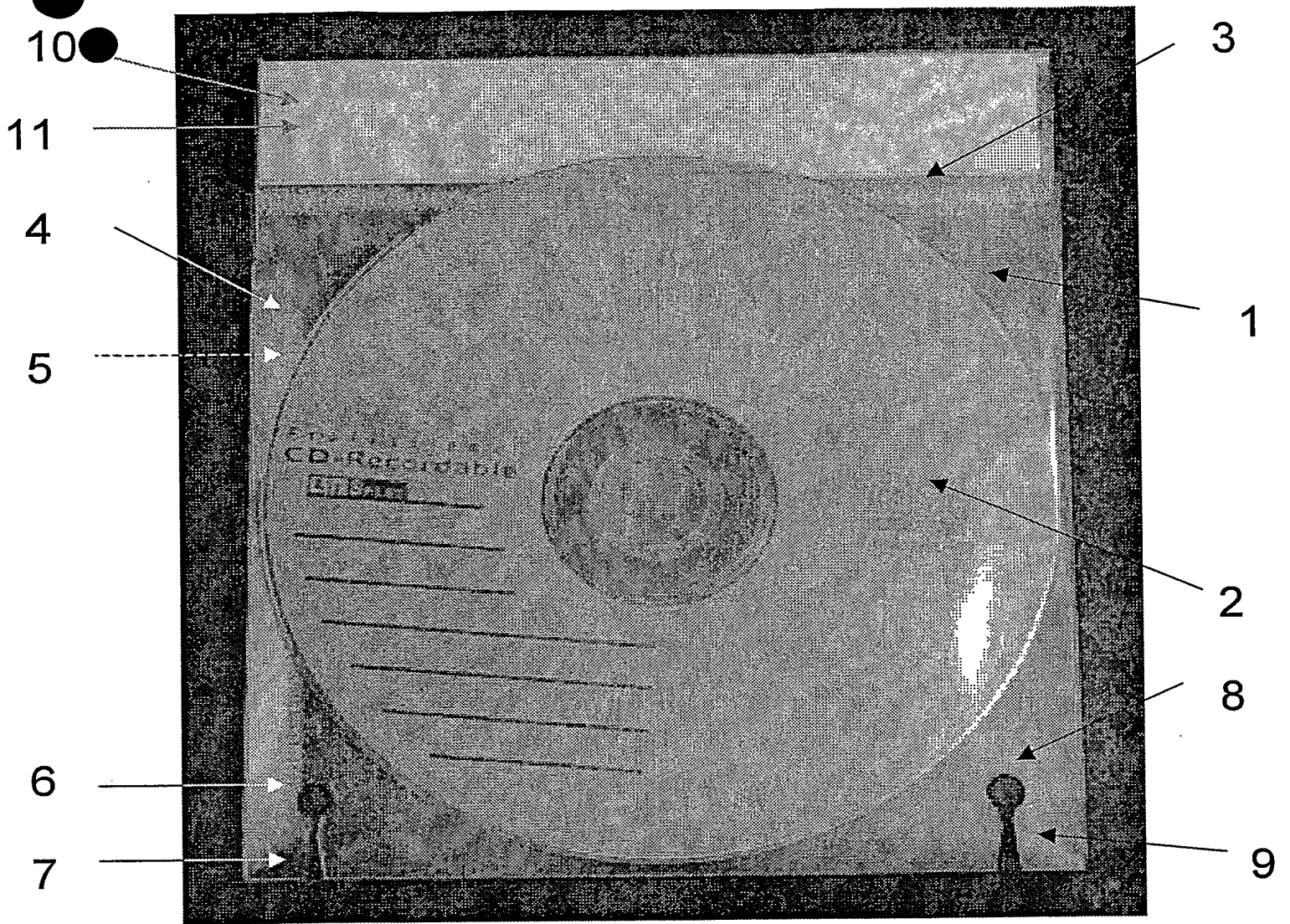


Figure 1



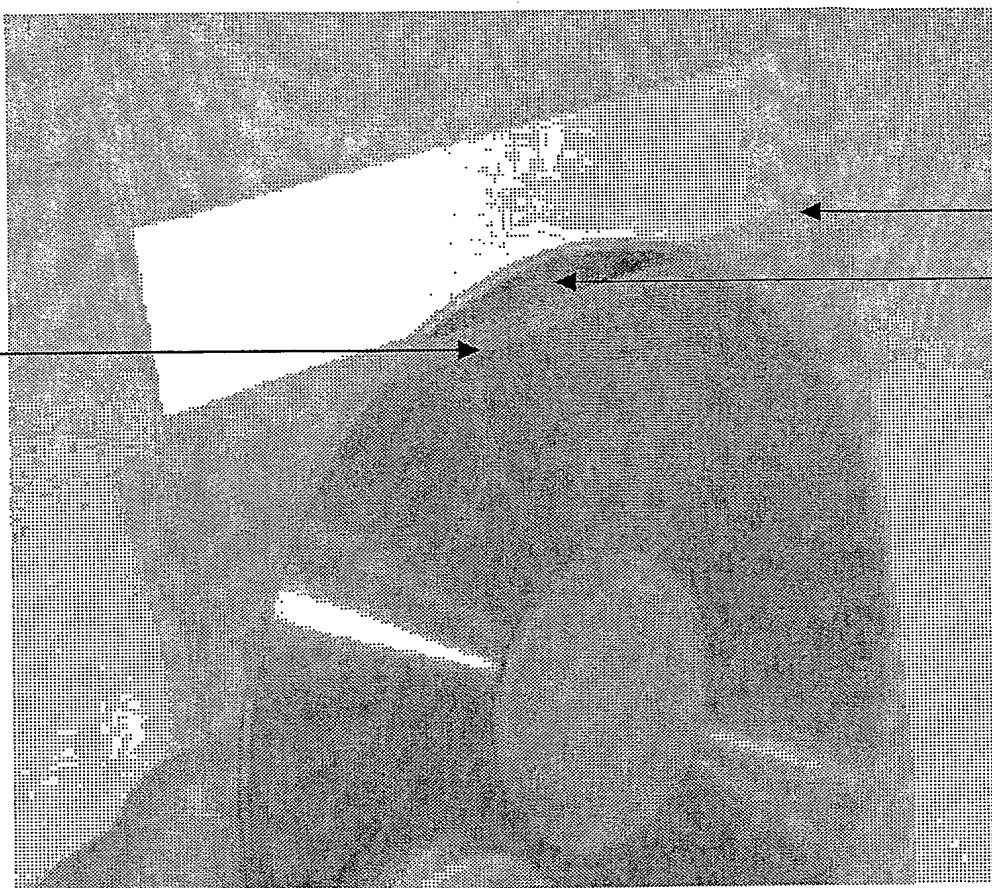


Figure 2



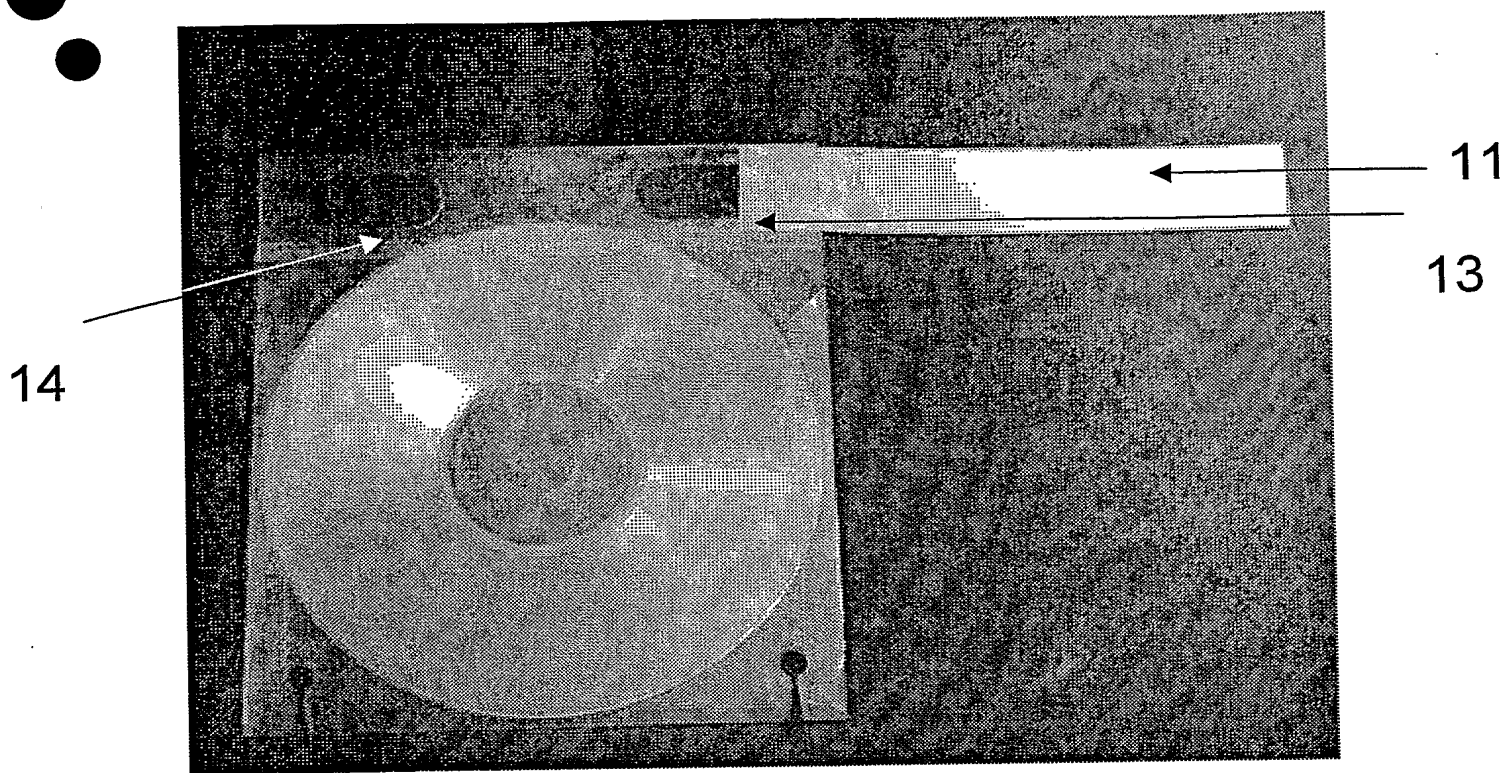


Figure 3



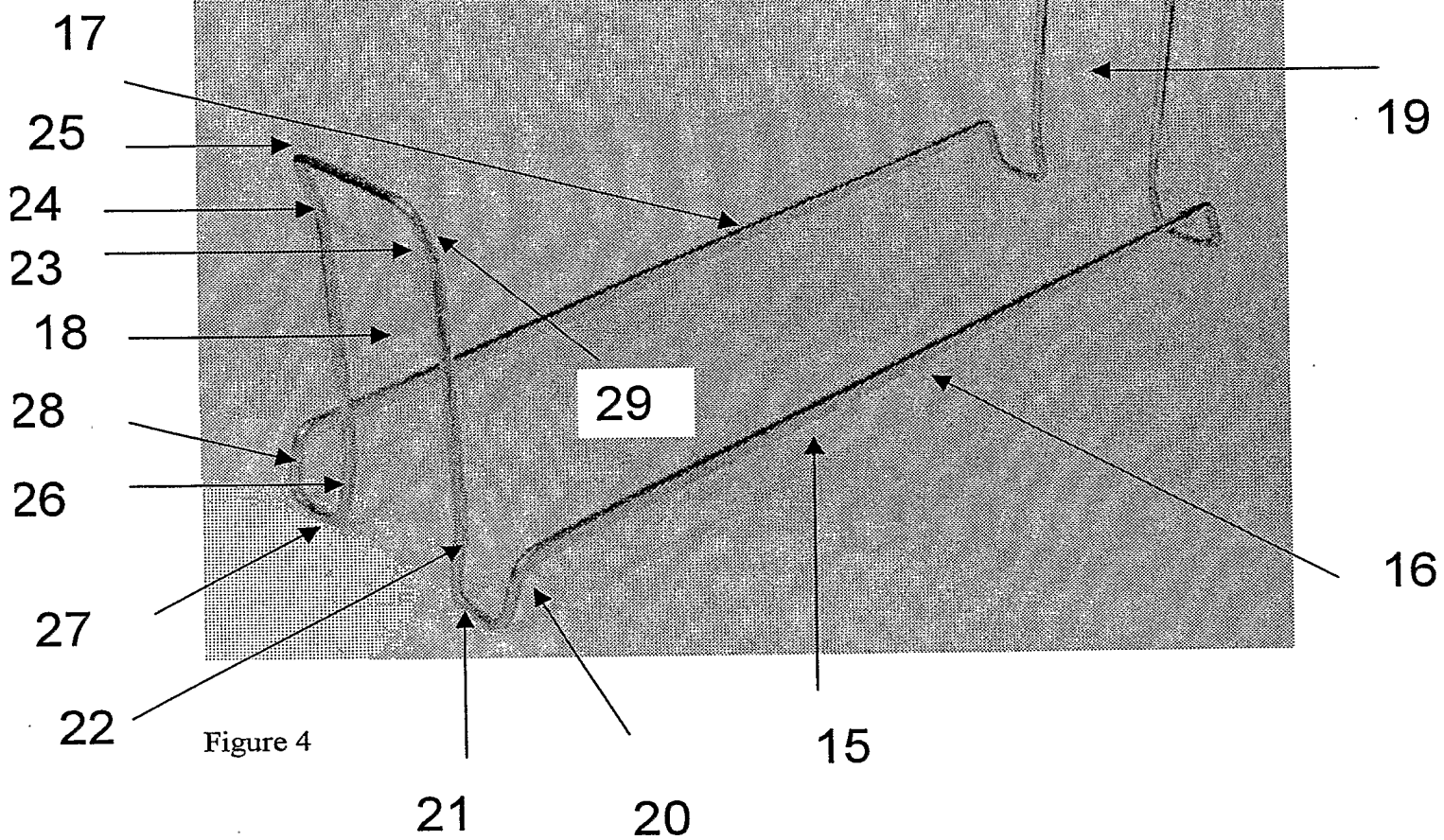


Figure 4



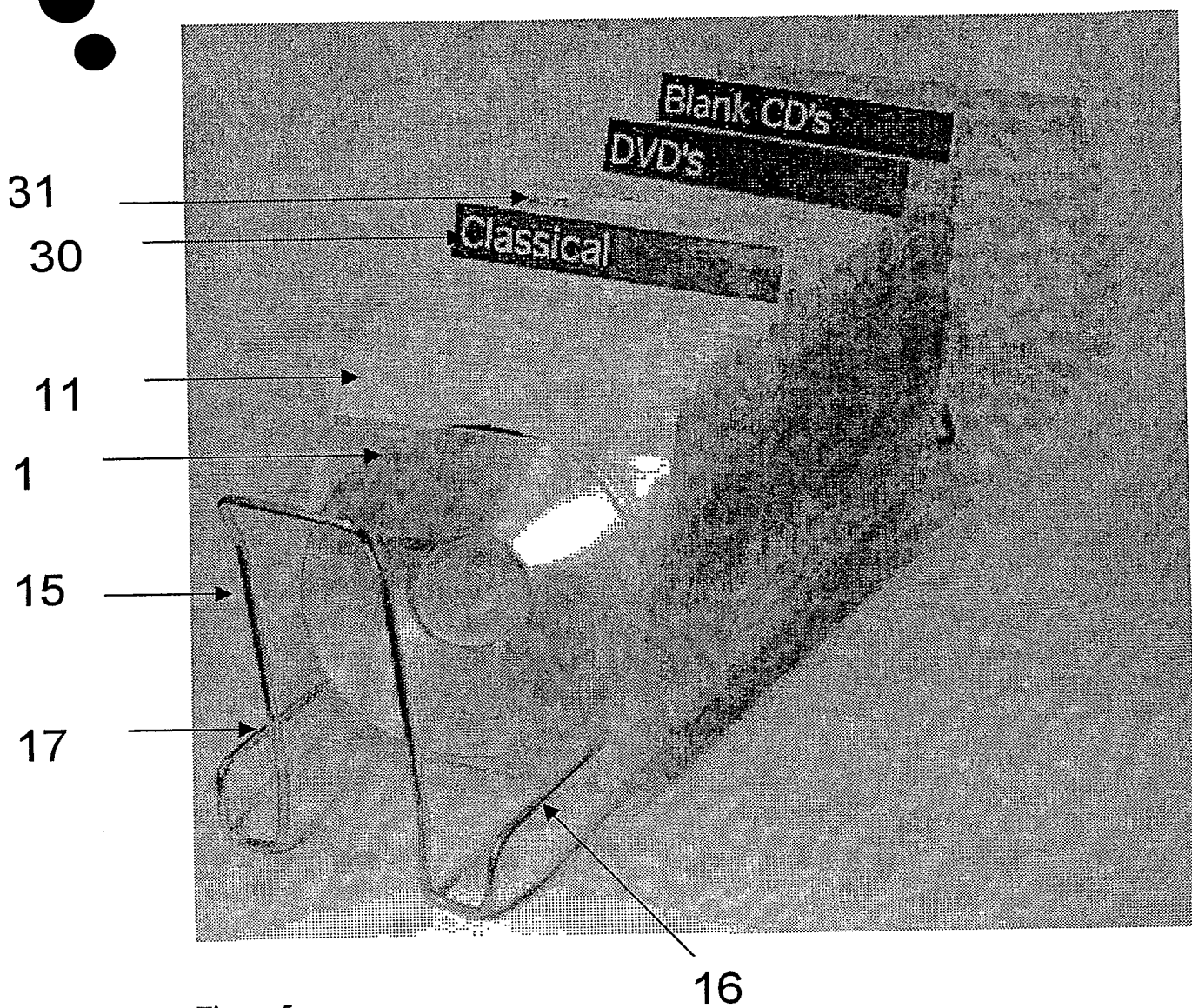


Figure 5



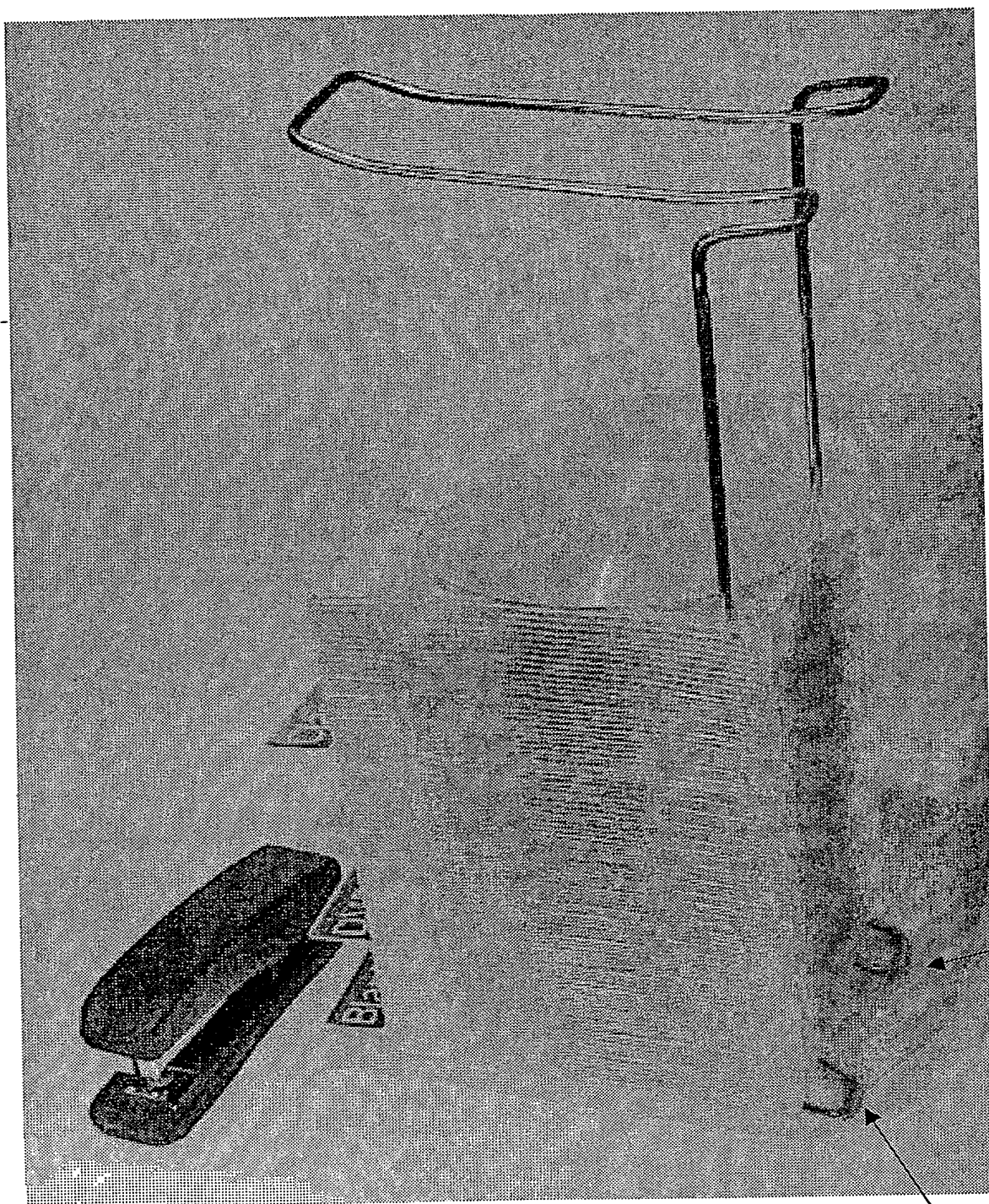
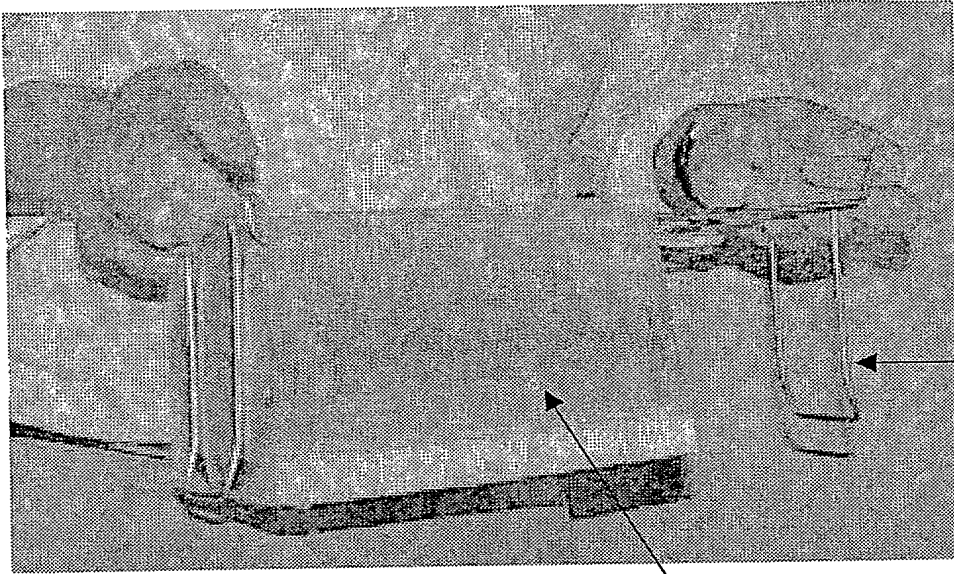


Figure 6

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Figure 7

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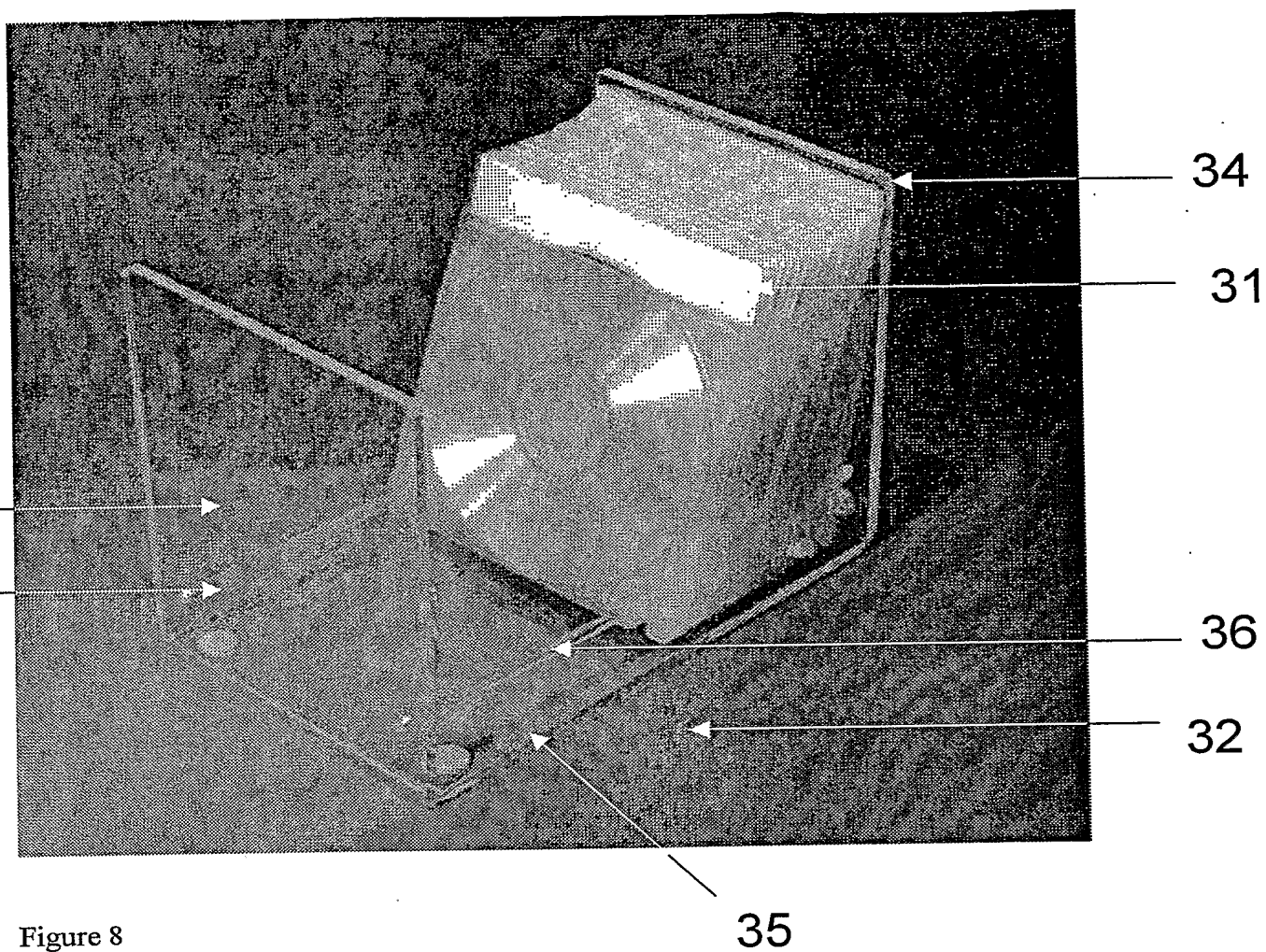
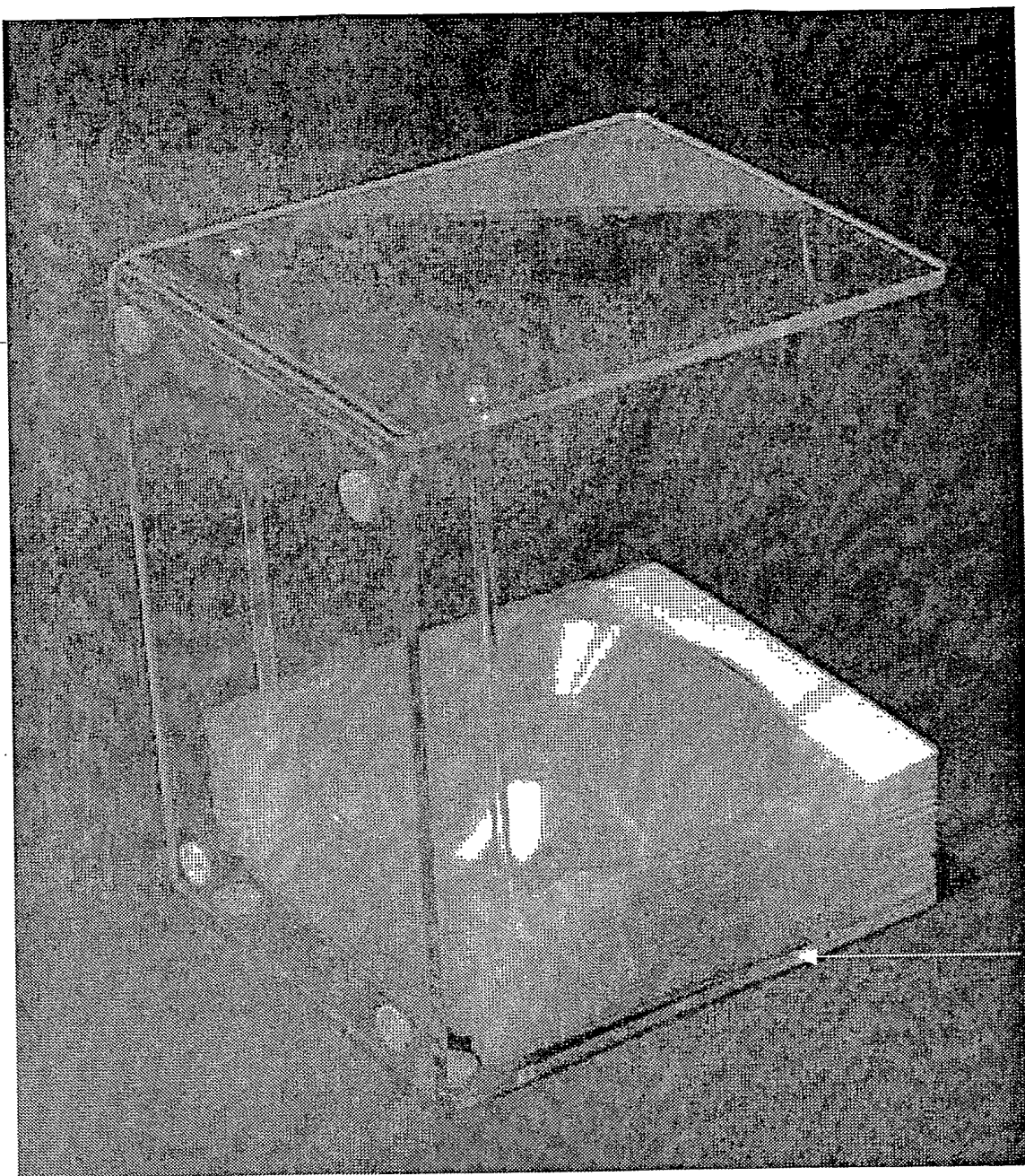


Figure 8





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Figure 9



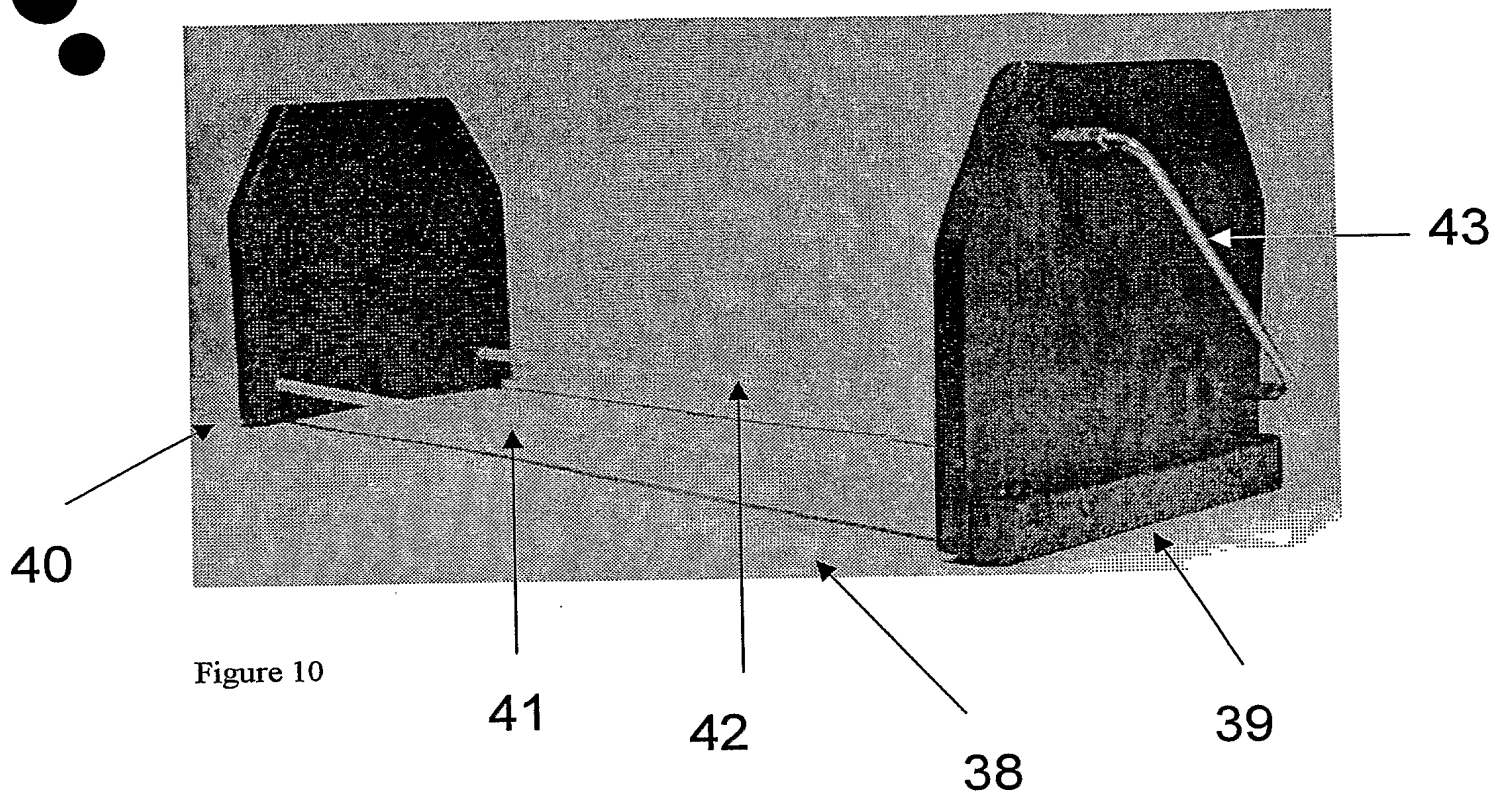


Figure 10



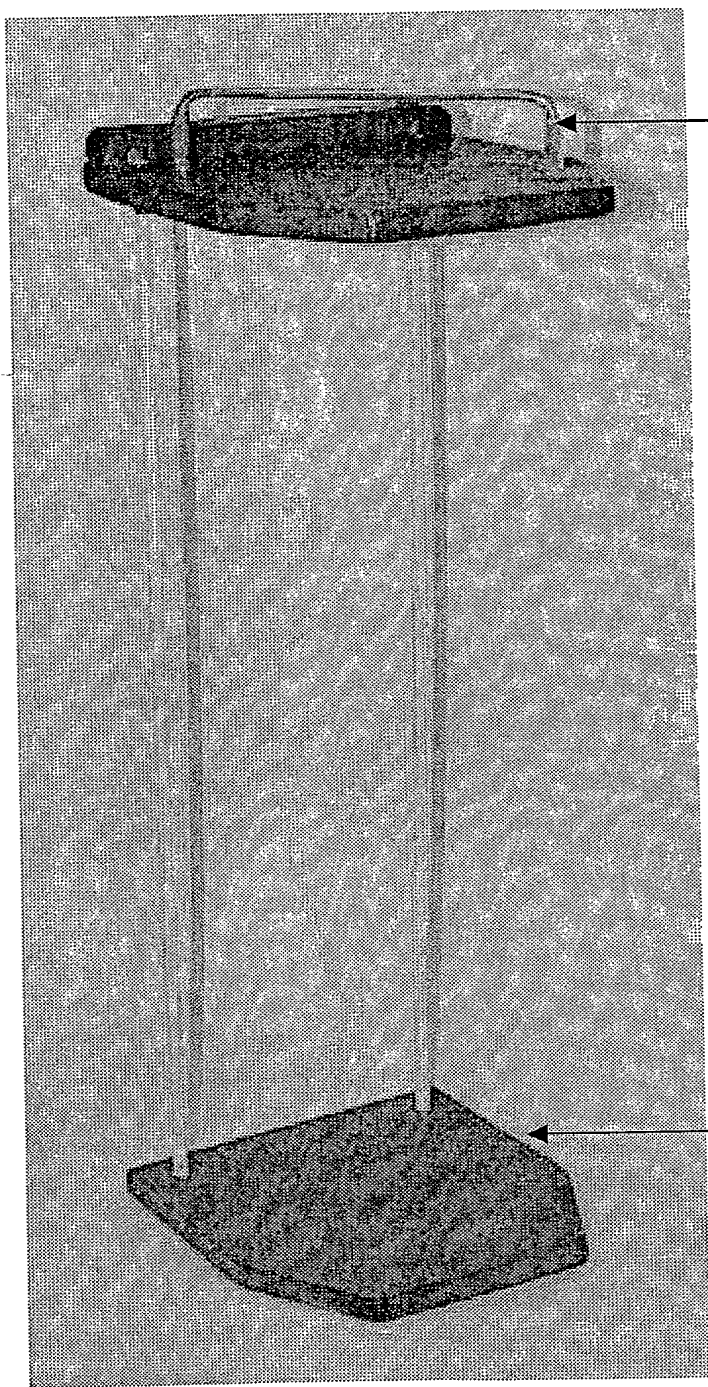
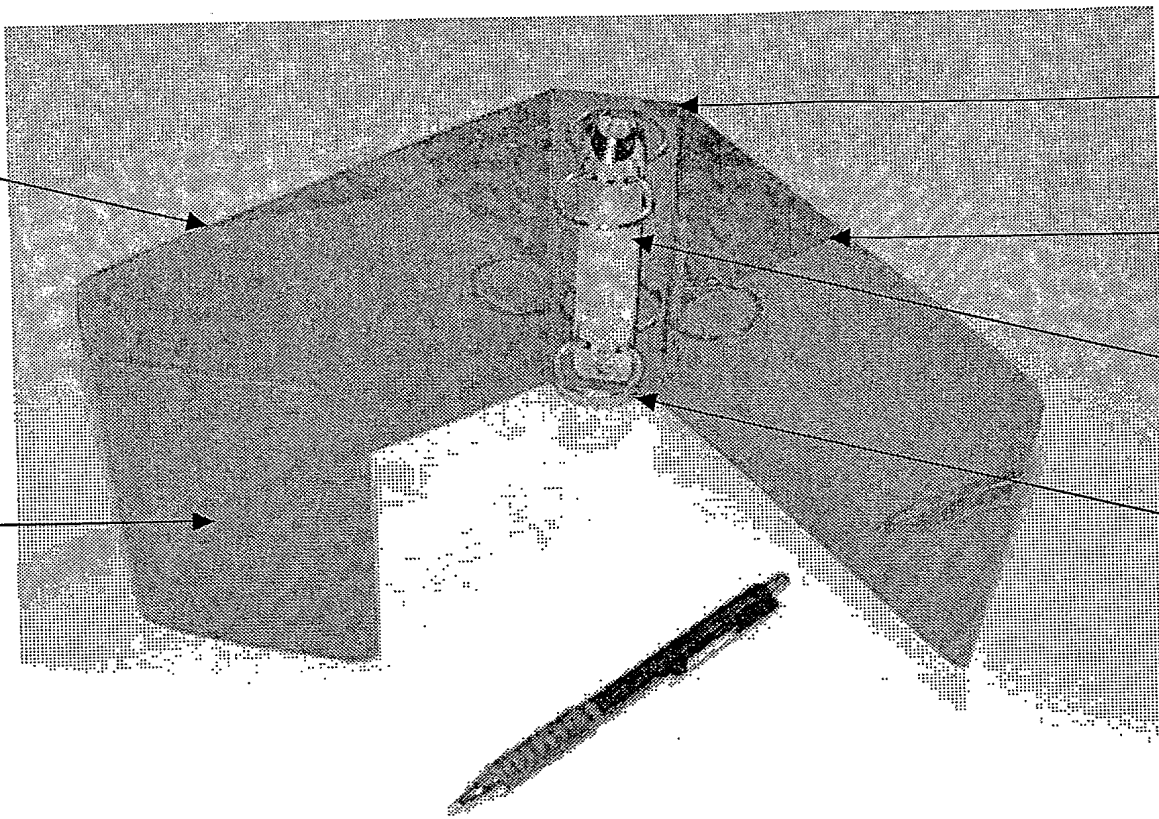


Figure 11





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Figure 12



1

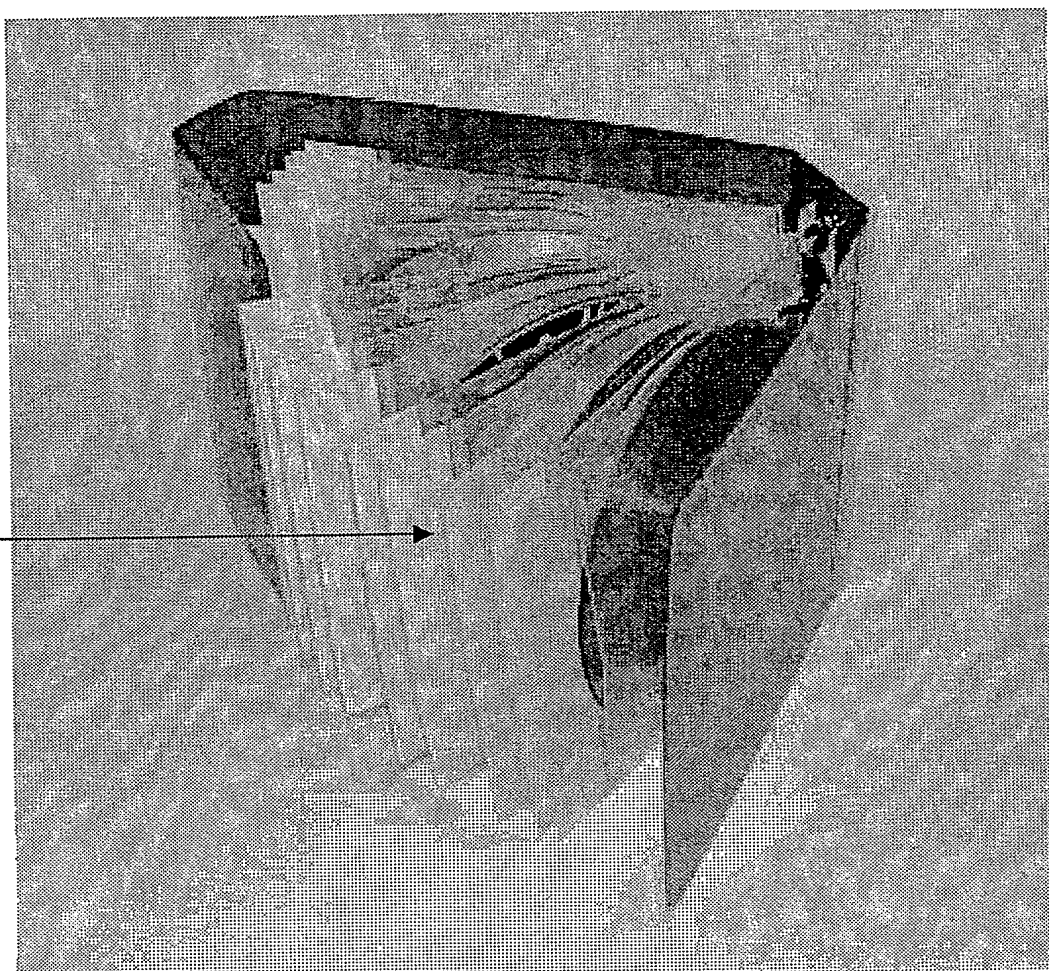
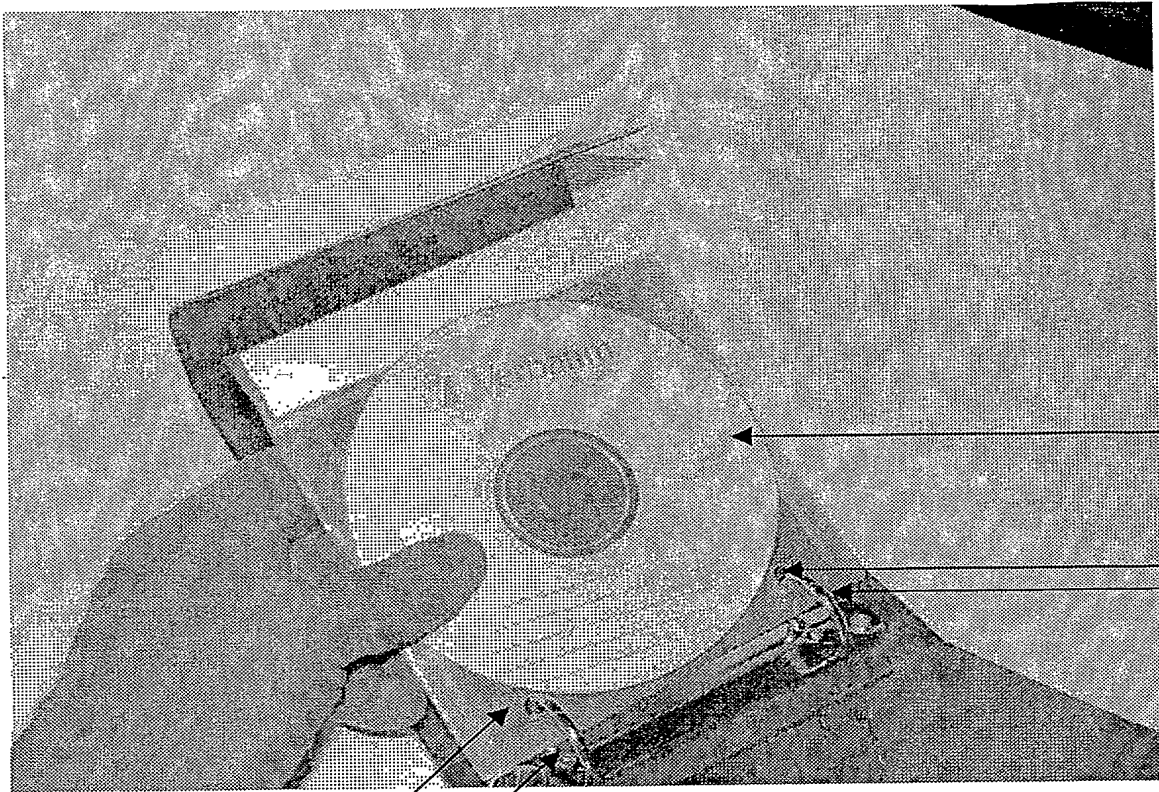


Figure 13





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Figure 14

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